

# *City of Alexandria, Virginia*

## MEMORANDUM

DATE: OCTOBER 4, 2000

TO: ARCHITECTS, ENGINEERS, CONTRACTORS, AND HOMEOWNERS

FROM: ART D. DAHLBERG, <sup>AD</sup>DIRECTOR OF CODE ENFORCEMENT

SUBJECT: ALEXANDRIA SOILS POLICY

In accordance with Sections 401.4 of the Virginia Uniform Statewide Building Code, a soils policy has been designed for the City of Alexandria for all projects of use group R3 and R4. The attached manual which lays out the specifics of this program, is applicable to all projects submitted for permit on or after November 1, 2000. Commercial projects shall conform with requirements of the 1996 BOCA Code and the City of Alexandria Special Inspections Manual. The soil policy manual lays out threshold and requirements for soils reports, soils evaluations, pad certifications and inspection reports. This policy further establishes respective responsibilities of Code Enforcement Engineers and Inspectors, and the Geotechnical Engineer and their agents.

In brief, this policy establishes that all construction permits for new construction of use group R3 and R4 buildings will require the submission of a soils report prepared by a professional engineer registered in the State of Virginia. The inspection process for these projects will be dependent on the findings of this report. If the engineer determines that there are not soil considerations that need to be taken into account, then Code Enforcement Inspectors will conduct all inspection for this project. However, if the soils report indicates there are special soil conditions involved then the project will be designated as problem soils. When this occurs, pad certification, sub grade inspections, and backfill certification shall be performed by the geotechnical engineer while approval for concrete placement will be granted by the City Inspector. (Please refer to the manual for full details).

Requirements for soil investigations for additions to use group R3 and R4 buildings are dependent on the size of the addition. Involvement of a geotechnical engineer will be required in differing degrees for all additions greater than 100 square feet in footprint area. This role and responsibility is spelled out in the manual.

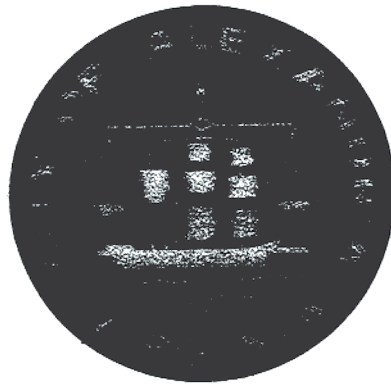
The Code Enforcement Bureau encourages all parties to review this manual and become familiar with its requirements prior to permit submission so that projects do not encounter unnecessary delays. Feel free to contact this office at (703) 838-4360 if you have questions concerning this manual.

cc: Thomas M. Hawkins, Fire Chief  
Richard Baier, Director, T&ES

**SOILS POLICY MANUAL  
for Use Groups R-3 and R-4**

**CITY OF ALEXANDRIA**

**2000 Edition**



**Code Enforcement Bureau  
301 King Street, Room 4200  
Alexandria, Virginia 22314  
703 838-4360**

---

# **INDEX OF TOPICS CONTAINED IN THE SOILS POLICY MANUAL**

---

<b>a.</b>	<b>Definitions</b>	
<b>I.</b>	<b>New Dwellings</b>	<b>Page 1</b>
<b>II.</b>	<b>Additions</b>	<b>Page 2</b>
	A. Footprint less than or equal to 100 sq ft.	<b>Page 2</b>
	B. Footprint more than 100 sq. ft., but less than or equal to 50% of the existing footprint	
	C. Footprint between 50% and 100% of existing building footprint	
	D. Footprint equal to or greater than existing building's footprint	
	E. "Pop-Up" Additions	<b>Page 3</b>
	F. Decks, Porches, Fences, Patios, Sheds, etc.	<b>Page 4</b>
<b>III.</b>	<b>Retaining Walls</b>	
<b>IV.</b>	<b>In-Ground Swimming Pools</b>	
<b>V.</b>	<b>Sub-Slab Drainage and Sump Pump Installation</b>	<b>Page 4</b>
<b>VI.</b>	<b>Foundation Repairs</b>	<b>Page 5</b>
<b>VII.</b>	<b>Structural Slab</b>	<b>Page 5</b>
<b>VIII.</b>	<b>Foundation Drainage and Backfill Material</b>	
<b>IX.</b>	<b>Expansive/Plastic Soils (Marine Clay)</b>	
<b>X.</b>	<b>Records of Inspections Performed by Professional Engineers/Architects</b>	
<b>XI.</b>	<b>Controlled Fill</b>	<b>Page 6</b>
<b>XII.</b>	<b>Compaction Reports</b>	<b>Page 7</b>
<b>XIII.</b>	<b>Qualifications for Engineers, Architects and their Agents</b>	<b>Page 7</b>
<b>XIV.</b>	<b>Inspections</b>	<b>Page 8</b>
	A. Footing Inspections	<b>Page 8</b>
	B. Backfill Inspections	<b>Page 9</b>
<b>XV.</b>	<b>Listing of Stamps for Approved Plans</b>	<b>Page 10</b>
<b>XVI.</b>	<b>Diagram of CABO Foundation Drainage and Waterproofing</b>	<b>Page 11</b>

## **DEFINITIONS**

- 1 AASHTO - American Association of State, Highway and Transportation Officials**
- 2 AEG - Association of Engineer Geologists**
- 3 Architect - a professional architect registered in the Commonwealth of Virginia**
- 4 ASCE - American Society for Civil Engineers**
- 5 ASTM - American Society for Testing and Materials**
- 6 CABO - current edition of the CABO One and Two Family Dwelling Code**
- 7 City Approved - approved by the Building Official or Engineering Staff of the Code Enforcement Bureau, City of Alexandria**
- 8 CPTU - Cone Penetration Test for Pore Pressure**
- 9 DMT - Dilatometer Test DMT - Dilatometer Test**
- 10. Geotechnical Engineer - a registered professional engineer in the Commonwealth of Virginia**
- 11. NICET - National Institute for Certification in Engineering Technology**
- 12. Problem Soils - expansive soils, plastic soils, "marine clay", contaminated soils, wetlands, high water table, buried debris, uncontrolled fill, low allowable bearing capacity, and/or potential slope stability problems.**
- 13. Professional Engineer - a professional engineer registered in the Commonwealth of Virginia**
- 14. Soils Evaluation - a less in-depth field exploration, following accepted guidelines/practices set forth by ASTM, ASCE AASHTO and/or AEG, to determine soil conditions prior to construction. Visual observation of hand auger or test pit exploration is acceptable for a soils evaluation.**
- 15. Soils Report - an in-depth, thorough field exploration, following accepted guidelines/practices set forth by ASTM, ASCE AASHTO and/or AEG, to determine soil conditions prior to construction. Visual observation of hand auger or test pit exploration alone is not acceptable for a soils report.**
- 16. Structural Engineer - a professional engineer registered in the Commonwealth of Virginia**
- 17. USCS Classification - Unified Soil Classification System**
- 18. Use Group R3 - buildings intended for occupancy as one or two family dwelling units (ie: single family detached homes or duplexes); or, multiple single-family dwellings where each unit has an independent means of egress and is separated by a fire separation assembly (ie: townhouses).**
- 19. Use Group R4 - buildings intended for occupancy as detached one or two family dwellings and one-family townhouses not more than three stories in height, and all accessory structures, designed and built under the provisions of the CABO code.**
- 20. VUSBC - current edition of the Virginia Uniform Statewide Building Code**
- 21. WACEL - Washington Area Council of Engineering Laboratories - an association of Engineering Laboratories, Inspection Agencies and Building Officials**

# **CITY OF ALEXANDRIA CODE ENFORCEMENT BUREAU SOILS POLICY MANUAL**

---

This manual has been developed to assist in identifying when soils reports, soils evaluations or soils investigations are required when submitting plans to obtain building permits for Single Family Dwellings, Townhouses and/or One and Two Family Dwellings in the City of Alexandria (Use Groups R3 and R4). This policy will address requirements for the construction of new dwellings and alterations or additions to existing dwellings.

## **I. New Dwellings**

A condition of receiving a permit for all new dwellings shall be the submittal of a soil report. The soil report shall be signed and sealed by a licensed, professional engineer who is experienced in geotechnical matters utilizing exploratory test pits, soil boring, echo soundings, cone penetration tests (CPTU) or dilatometer tests (DMT). The soil report is required regardless of soil mapping.

The exploration methods for the report shall follow accepted guidelines and/or practices as set forth by ASTM, ASCE, AASHTO, AEG, etc. Visual observation of hand auger or test pit exploration alone is not considered sufficient for the soil report. In addition to logs of the field exploration, the soil report shall detail the USCS classification and physical properties of soils at the building area and any potential problems discovered (ie: contaminated soil, wetlands, expansive soil, high water table, buried debris, uncontrolled fill, low allowable bearing capacity, potential slope stability problems, etc.) and shall also state whether controlled structural fill will be required to raise any portion of the site within the building footprint.

The soil report shall include boring or test pit logs and written descriptions of soil types encountered as well as surface and subsurface features and any ground water encountered. Soils shall be classified by following ASTM D2487 and ASTM D2488 and further laboratory testing shall be performed as required to determine engineering characteristics of the soil types encountered. The soil report shall contain out the Geotechnical engineer's recommendations to remedy any soil problems encountered: soft/loose footing subgrade; soft/loose slab subgrade; foundation; backfill material; special drainage requirements controlled structural fill; slope stability; retaining walls; basement walls; deep foundations; etc.

**Problem Soils:** When soil problems are indicated in the soil report, the Code Enforcement reviewing engineer shall declare the plans a problem soil site. The "Problem Soil" stamp will be applied to the approved plans and the soil report is made a part of the approved plans. The Geotechnical Engineer or his/her agent will be required to inspect the footing subgrade and backfill material, as well as any engineered systems such as caissons, pilings, special drainage systems or non standard footing designs. The Code Enforcement reviewing engineer shall mark on the approved plans a list of those inspections required to be performed by the Geotechnical Engineer.

The Code Enforcement building inspector will be responsible for confirming that all required geotechnical inspections are performed, including any that are required due to unforeseen situations that arise during the construction process. The field copy of the footing and/or subgrade inspection report will be required to be on site at the time that the Code Enforcement building inspector performs the footing/foundation inspection. A final footing and/or subgrade inspection report and backfill material report, signed and sealed by the Geotechnical Engineer, shall be on site at time of the final building inspection. No final inspection is to be approved by the Code Enforcement building inspector until all required reports have been received. A copy of each of the final reports shall be attached to the final inspection ticket completed by the Code Enforcement building inspector.

**No Problem Soils:** When the soil report indicates that no soil problems exist, the plan review and permit issuance process proceed as usual. All field inspections shall be performed by the Code Enforcement building inspector.

The Building Official may waive the soil report requirement if extenuating circumstances exist which justify a waiver. An example of extenuating circumstances would be the presentation of a recent soil report from an adjacent lot which indicates that there are no soil problems in the area. When a waiver is issued, a written record of the waiver, defining other available information and its location, will be included in the permit records and on the approved plans.

## **II. Additions to Existing Dwellings**

### **A. Footprint area of the addition is 100 square feet or less**

Plan review and inspections proceed as usual. No special engineering or geotechnical inspections are required **unless** the Code Enforcement building inspector determines at time of footing/foundation inspection that soil problems exist. At that time, the job will be declared a problem soil site and a soil report will be required as stated above.

### **B. Footprint area of the addition is less than or equal to fifty percent of the footprint area of the existing structure, but more than 100 square feet**

No geotechnical report or engineering is required for permit issuance. A geotechnical engineer is required to inspect the footing/foundation subgrade prior to placement of concrete. This inspection shall verify:

1. that the allowable bearing capacity of the subgrade soils is adequate and meets project specifications;
2. that the footing/foundation will rest on natural soils or on properly controlled and certified structural fill with a City approved soil report from the Geotechnical Engineer; and
3. the Geotechnical Engineer will evaluate the suitability of any potential foundation backfill material at the time of footing/foundation inspection.

The footing/foundation shall also be inspected by a Code Enforcement building inspector to verify compliance with the approved plans and the VUSBC. Code Enforcement inspectors shall also inspect the foundation waterproofing and drainage system. The Geotechnical Engineer will inspect the foundation backfill material at the time of placement and shall submit a declaration to the Code

Enforcement building inspector as to the suitability of the footing/foundation backfill material prior to final inspection. The final building inspection shall not be approved until this declaration is received and attached to the final inspection ticket.

**C. Footprint area of the addition is between fifty percent and one hundred percent of the footprint area of the existing structure**

A soils evaluation of the site by a licensed geotechnical engineer shall be required prior to permit issuance. The geotechnical engineer, or his agent, shall investigate the site using exploration methods that follow accepted guidelines and/or practices as set forth by ASTM, ASCE, AASHTO, AEG, etc. Visual observation of hand auger or test pit exploration is sufficient for the soils evaluation. The evaluation shall include a description of soil conditions encountered and shall detail solutions to any problem soils encountered. The Code Enforcement reviewing engineer will make the soil evaluation part of the approved plans.

The Geotechnical engineer, or his agent, shall inspect the footing/foundation subgrade prior to the placement of concrete. This inspection shall verify that the surface bearing capacity of the subgrade soils is adequate and conforms to the requirements of the soil evaluation. In addition, the report shall certify that the footing will rest on natural soils or on properly controlled and certified structural fill in accordance with the Code Enforcement approved soil report. The Geotechnical Engineer shall evaluate the suitability of any potential foundation backfill material at the time of footing/foundation inspection. The footing/foundation shall be inspected by a Code Enforcement building inspector to verify compliance with the approved plans and the VUSBC.

The Geotechnical Engineer shall inspect the foundation waterproofing and backfill material at the time of placement and shall submit a declaration as to the suitability of the foundation backfill material to the Code Enforcement building inspector prior to final inspection. The Code Enforcement building inspector shall not approve the final building inspection until this, and any other required certifications, have been received.

**D. Footprint area of the addition is greater than the footprint area of the existing structure**

The procedure for new dwellings is to be followed.

**E. "Pop-up" Addition to the upper level of an existing dwelling on the existing foundation**

An Engineering Analysis is required if the added floor area is greater than fifty percent of the footprint area of the foundation, exclusive of previous additions or wings not supporting the added load. The analysis must be stamped and sealed by a licensed professional engineer or architect, and attest that the existing soil and foundation is able to support the added load. The engineering analysis is required regardless of soil mapping, and should take actual soil strength conditions into account.

## **F. Decks, Porches, Fences, Patios, Sheds, Detached Garages, etc.**

No special procedures are required prior to permit issuance. When conducting inspections, the Code Enforcement building inspector shall determine if there are any problem soils present and what action shall be taken at that time.

## **III. Retaining Walls**

1. Retaining walls supporting two feet or less of unbalanced fill do not require engineering.
2. Retaining walls supporting between two feet and six feet of unbalanced fill will require an engineered design, signed and sealed by a licensed professional engineer. This design shall detail reinforcement requirements, drainage requirements and backfill material requirements. Standardized designs or tables may be approved at the discretion of the Code Enforcement reviewing engineer. If located in a mapped problem soils area, the inspection procedure for retaining walls supporting six or more feet of unbalanced fill (see Item III.3) shall be followed.
3. Retaining walls supporting six feet or more of unbalanced fill will require an engineered design, signed and sealed by a licensed professional engineer, as described in item 2 above. Further, a licensed professional engineer, architect or designated agent, will be required to conduct inspections during the construction and backfill of the wall. Field reports of these inspections will be submitted to the Code Enforcement building inspector at the time of the City's periodic inspections of the wall.

## **IV. In-Ground Swimming Pool**

1. If the proposed pool site is mapped as problem soil, the reviewing engineer shall declare the permit as a problem soil site and informs the applicant that a foundation design by a Geotechnical Engineer is required. The foundation design shall address the structural requirements of the pool. This design shall be approved prior to issuance of permit and shall be required to be on site at time of the reinforcing steel inspection. The "Problem Soil" stamp shall be applied to the approved plans by the Code Enforcement reviewing engineer, along with a list of required inspections.
2. If not mapped as a problem soil, plan review proceeds as usual. The Code Enforcement building inspector shall determine if problem soils are present at the time of inspection.

## **V. Sub-Slab Drainage and Sump Pump Installation**

When an interior drainage system is installed to alleviate wet basement problems, a simple plan of the proposed system detailing draitile layout, sump pit and location of sump pump discharge point on the property is required for plan review. The Code Enforcement building inspector shall perform all inspections. If significant damage to the foundation exists, the procedure for foundation repairs is to be followed.

## **VI. Foundation Repairs**

A engineered design, signed and sealed by a licensed professional Structural Engineer, shall be



required for major foundation repairs (not including interior sub-slab drainage systems or minor repairs). Major repairs include:

- bowed or bulging foundation walls or slabs;
- cracks in walls or slabs showing displacement;
- underpinning, exterior drain installation and/or backfill replacement;
- pilings;
- helical piers;
- cement or chemical grouting;
- slope stabilization.

The design shall include the licensed engineer's determination of the cause of the foundation damage and the recommendations for repair. This recommendation shall include plans, cross sections and construction sequencing as required. The licensed engineer, or designated agent, shall perform inspections during the repair and backfill of the damaged structure(s). Field reports of these inspections will be submitted to the Code Enforcement building inspector at the time of the City's periodic inspections of the repair work. A final sealed report shall be submitted by the licensed engineer to the Code Enforcement building inspector before the final inspection is approved.

## **VII. Structural Slab**

Any concrete slab, other than a patio, driveway or sidewalk, bearing on soil fill of more than eight inches in depth requires a Code Enforcement approved compaction report (see section on Controlled Fill) or shall be designed by a licensed professional engineer as a structural slab. The design shall bear the seal and original signature of the design engineer. Standardized designs or tables may be approved at the discretion of the Code Enforcement reviewing engineer. The structural design shall be approved by the reviewing engineer and be made part of the approved plans. Inspection of the slab will be made by the Code Enforcement building inspector per the approved structural plan.

## **VIII. Foundation Drainage and Backfill Material**

All areas of the City of Alexandria are considered to have a high water table. Therefore, any foundation wall enclosing either habitable or storage space shall be waterproofed as per the 1995 CABO code, section 406.2. Parging and/or asphaltic coating without an additional membrane is not sufficient (see attached detail for waterproofing). All foundation backfill material is to be clean, free draining, non-expansive soil and shall be sloped away from the foundation to facilitate drainage. The Code Enforcement building inspector shall inspect all foundation waterproofing and drainage prior to the placement of backfill material.

Foundations enclosing habitable or storage space (except for additions of 100 sq. ft. or less footprint area) require a declaration of backfill material suitability by the Geotechnical Engineer. The soil is to be monitored as it is placed and a declaration of the backfill material suitability is to be made available to the Code Enforcement building inspector at the time of the final inspection. Any special requirements for drainage or backfill material specified by the Geotechnical Engineer in the soil

report or soil evaluation, must be documented in a letter of certification to confirm compliance with those requirements. The Code Enforcement building inspector shall not issue the final approval until all required reports are received and attached to the final inspection ticket.

#### **IX. Expansive/Plastic Soils (“Marine Clay”)**

When expansive soils are encountered within the building area of a new dwelling, addition or deck, the expansive material shall be undercut so that a minimum of two feet of suitable material, such as controlled structural fill, underlies any slab on grade. Footings bearing on expansive soils shall have a depth below finished grade of at least four feet to the bottom of the footing. These are minimum requirements for residential construction; however, the requirements of the Geotechnical Engineer may exceed these minimums.

#### **X. Records of Inspections performed by Professional Engineers/Architects or Their Agents**

It is the responsibility of the Code Enforcement reviewing engineer to designate on the approved construction plans the inspections which are required to be performed by a professional geotechnical engineer, structural engineer, architects or their agent(s). It is the responsibility of the Code Enforcement building inspector to receive field copies of the required inspections and to attach them to the inspection tickets. The final copies of these inspection reports shall bear the design professional’s seal and original signature and shall be attached to the final inspection ticket and placed in the project file. If the required final copies bearing the design professional’s seal and original signature are not made available to the Code Enforcement building inspector by the time of final inspection, or if the inspector deems the supplied reports to be inadequate, the final inspection will be disapproved until all acceptable final copies are received.

#### **XI. Controlled Fill**

If any part of a new building or structure requiring a building permit by the VUSBC is to bear on controlled/ structural fill, a compaction report is to be approved by the Code Enforcement reviewing engineer in accordance with the following checklist. The applicant for the building permit is to be informed by the Code Enforcement reviewing engineer that the city-approved compaction report is to be available for the Code Enforcement building inspector at the time of footing inspection. The “Controlled Fill” stamp shall be placed on the approved plans. A copy of the approved compaction report shall also be placed in the job file. The Code Enforcement building inspector is not to approve the footing/foundation inspection until the approved compaction report is made available for review.

#### **XII. Checklist for the Approval of Compaction Reports**

- A statement of criterion (ASTM standards) used when testing soils and fill placement.
- A maximum lift thickness of one foot per lift.

- A minimum of one compaction test per lift. Lifts over 2,500 square feet require one compaction test per 2,500 square feet or fraction thereof. At least one test per lift is required within the footprint of each detached building on a fill pad, preferably on the footing/foundation line. Each group of continuous townhouses can be considered as a single building.
- A copy or excerpt from the site/grading plan from which the surveyor located the building footprint and determined finished grade.
- A plot showing approximate locations of all compaction tests by number. Test locations should vary from lift to lift to maximize the coverage area.
- A listing or log of all compaction tests by number showing the result of each test.
- Any failing test must have been retested in the same location until a passing result was obtained.
- A narrative description of the fill placement process, including, but not limited to:
  - the extent of surveying used to locate the fill pad and to determine grades;
  - the stripping and proof-rolling of the site establishment of proper offsets of fill pad beyond building footprint;
  - the special circumstances encountered (ie: groundwater, pumping subgrade, steep slopes etc.); and
  - a description of actions taken to remedy or address those special circumstances.
- Source(s) of fill material used and the type of test equipment used.
- At least one Proctor curve taken from fill material actually used on the pad.
- Wording which unambiguously declares the fill as meeting the requirements of the Geotechnical Report and the VUSBC.
- Geotechnical Engineer of Record's seal and original signature.

### **XIII. Qualifications for Engineers, Architects and Their Agents**

**Geotechnical Engineer:** Shall be a registered professional engineer (PE) in the Commonwealth of Virginia and shall have considerable experience in geotechnical matters. Designated agents shall be experienced field technicians certified by WACEL, NICET, or specifically designated by the PE.

**Structural Engineer:** Shall be a registered professional engineer (PE) in the Commonwealth of Virginia and shall have considerable experience in design and construction of structural elements. Designated agents shall be experienced field technicians certified by WACEL, NICET, or specifically designated by the PE.

**Architect:** Shall be a registered professional architect in the Commonwealth of Virginia and shall have considerable experience in design and construction issues.

The Geotechnical Engineer, Structural Engineer, or their designated agents, who perform inspections as outlined in this policy, shall be approved by the Director of Code Enforcement (or designee) prior to the performance of any inspections. Application for permission to perform inspections shall be made to the Director in the form of a letter outlining the qualifications of each registered professional and any agents who will be performing inspections. Pertinent documentation, such as certifications,

shall be included with the application letter. Application shall be made for each separate project, and any changes of personnel for performing inspections is subject to approval.

#### **XIV. Inspections**

Code Enforcement building inspectors shall perform all inspections required by the Virginia Uniform Statewide Building Code (VUSBC) and this policy. Code Enforcement building inspectors shall be contacted to conduct field inspections even when soil conditions (problem soils) indicate that inspections are required by a professional engineer. The City building inspector's function on Problem Soil inspections is to confirm compliance with issues beyond the scope of the engineer's focus and to assess the quality of the inspection performed by the professional engineer or the engineer's agent. The inspection is not considered approved until the Code Enforcement building inspector signs the Code Enforcement final building inspection ticket indicating approval.

##### **A. Procedure for Footing Inspections**

###### **1. Non-Problem Soil Site (no Geotechnical inspections required):**

1. Code Enforcement building inspector consults the approved plans for required footing/ foundation dimensions, reinforcement and general layout.
2. Code Enforcement building inspector inspects excavations, formwork and reinforcement to determine compliance with the VUSBC and the approved plans.
3. Code Enforcement building inspector observes and probes for bearing in the exposed subgrade soils. When soil problems are observed, such as uncontrolled fill, groundwater, plastic soils, low bearing capacity, buried debris, etc., the Code Enforcement building inspector declares the job a problem soil site which requires inspections by a Geotechnical Engineer. A revision to the approved plans is required. The revision shall be approved by the Code Enforcement Reviewing Engineer.
4. When controlled fill is in place, the Code Enforcement building inspector must see a copy of the approved compaction report before approving the footing for concrete placement.
5. When the footing is approved, an inspection ticket and a wall check notice is issued.

###### **2. Problem Soils Site (Geotechnical Inspections required):**

1. Code Enforcement building inspector consults the approved plans for required footing/ foundation dimensions, reinforcement and general layout.
2. Code Enforcement building inspector then inspects excavations and formwork to determine compliance with the VUSBC and the approved plans.
3. Code Enforcement building inspector confirms that subgrade soils have been inspected by the Geotechnical Engineer, or designated agent. The inspector receives a field copy of the Geotechnical Engineer's inspection report. The Geotechnical Engineer then follows up with a signed and sealed final copy to the Code Enforcement office to the attention of the Code Enforcement building inspector as soon as possible. Concrete will not be approved for placement until the Geotechnical Engineer's inspection report of the subgrade soils is received.

4. If controlled fill is in place, the Code Enforcement building inspector must see a copy of the city-approved compaction report before approving the footing/foundation for concrete placement.
5. When the footing/foundation is approved, an inspection ticket is issued along with the wall check notice form. Copies of any Geotechnical inspections must be attached to the inspection ticket.

#### **B. Procedure for Backfill Inspection**

1. The Code Enforcement building inspector reviews the approved plans and inspects waterproofing, tar, gravel, draitile, filter fabric, etc. The Code Enforcement building inspector shall also observe the backfill material at this time. If Geotechnical inspections are required, a backfill material suitability declaration by a Geotechnical Engineer will be required to be on site at the time of final inspection. If no Geotechnical inspections are required, and the proposed backfill material is questionable or is being imported from another site, a backfill material suitability declaration by a Geotechnical Engineer may be required at the discretion of the Code Enforcement building inspector.
2. If required, a copy of the backfill material suitability declaration by the Geotechnical Engineer will be obtained at the time of final building inspection by the Code Enforcement building inspector.

## **XV. Stamps for Approved Plans**

### **A. GEOTECHNICAL INSPECTIONS REQUIRED**

#### **GEOTECHNICAL INSPECTIONS REQUIRED**

- Field copy of Geotechnical Engineer Subgrade inspection report required at footing/foundation inspection.
- Final copy of Geotechnical Engineer Subgrade inspection report required at Final Building inspection.
- Geotechnical Engineer backfill material suitability declaration required at Final Building inspection.
- Inspection and Certification reports must bear the seal and original signature of the Geotechnical Engineer.
- Footing/Foundation and Final Inspections will not be Approved until reports are received.

Other: \_\_\_\_\_

### **B. CONTROLLED FILL**

#### **CONTROLLED FILL**

A copy of the compaction report bearing the approval of the Code Enforcement Bureau will be required by the Code Enforcement Building Inspector at time of footing/foundation inspection.

### **C. STRUCTURAL ENGINEER INSPECTIONS REQUIRED**

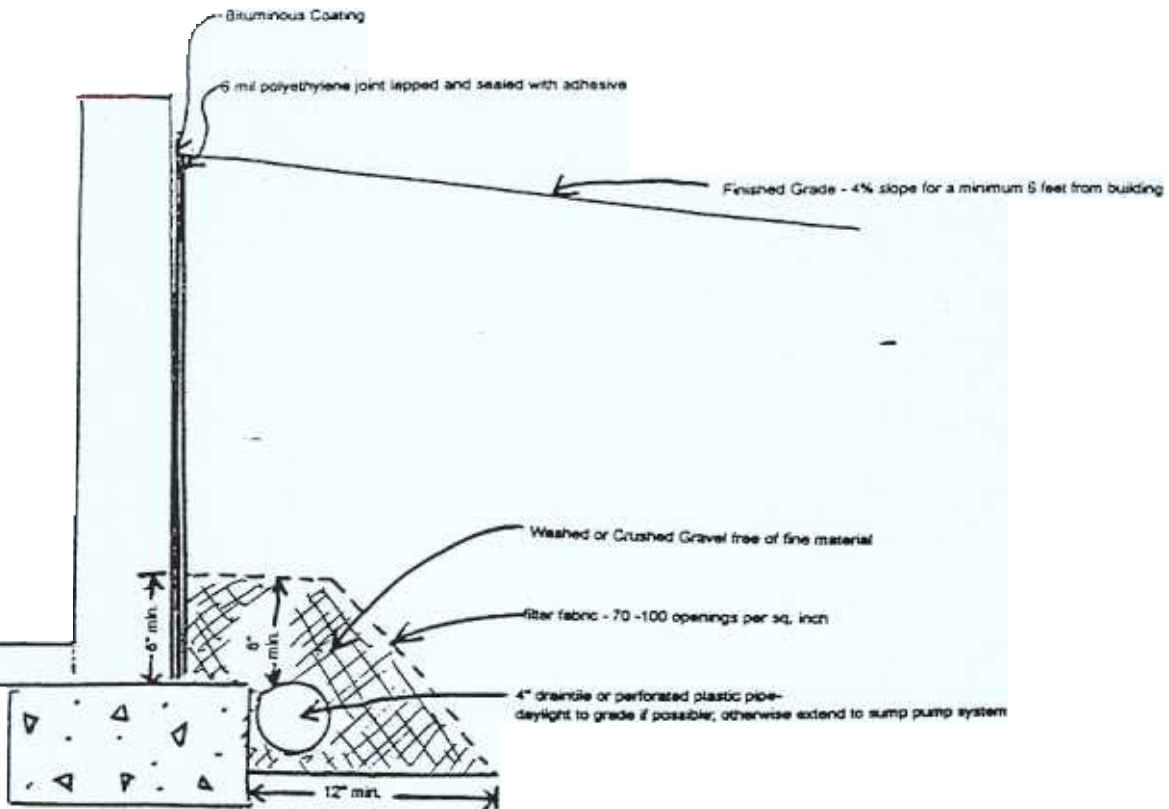
#### **STRUCTURAL ENGINEER INSPECTIONS REQUIRED**

The Structural Engineer or his agent will be required to inspect the construction for the following item(s):

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_

Field copies of the inspection reports shall be submitted to the Code Enforcement Building Inspector on a regular basis. At completion of the structure(s), the Engineer shall submit a signed and sealed final report approving the installation. Inspections shall not be approved until the final report is received.

For Masonry wall apply a minimum 3/8" portland cement paring



### Foundation Drainage and Waterproofing (per CABO1995 405 & 406.2)